

SCIENCE NEWS

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THE ATLANTIC CITY MEDICAL MEETINGS

"MAN'S place in future history will depend in no small degree on the food he eats." This prophecy was made by Dr. James S. McLester, of Birmingham, Ala., of the American Medical Association, in his presidential address before the joint sessions of that organization and the Canadian Medical Association. Longer life, larger stature, greater vigor and a higher level of cultural attainment are promised to those races of man that take advantage of the new knowledge of nutrition, Dr. McLester said. Man is no longer a puppet of fate, but through scientific advances in the study of foods and health he can now, to a considerable degree, be master of his own destiny. Scientific men have pointed the way for man to attain this mastery. The problem now rests with those responsible for education and government. People must be taught what foods to eat and they must be insured an adequate supply of food. Something like twenty million American people are probably getting barely enough, or in some cases not even enough, food of the kind to keep them healthy. "This condition, if continued, will surely affect the health of the race. To make agriculture profitable to the extent that a good rural population can be maintained and at the same time the rest of the population supplied with cheap food is a problem that confronts the nation." While he did not himself offer a solution of the problem, he quoted the report of the Elgin Committee, appointed to determine a national agricultural policy for Scotland, as follows: "It is in the interest of the state that the price of food be kept so low that the poorest can obtain an adequate dietary."

"THE breath of life is oxygen; the seat of life is the cell," said Dr. Jonathan C. Meakins, of Montreal, president of the Canadian Medical Association, in his address before the joint sessions of his organization and the American Medical Association. Dr. Meakins described the "beautifully subtle manner" in which animals, including man, acquire "this essence of life imperative for survival" and the way in which they incidentally use it for "that love song, so to speak, with which to allure a mate for the perpetuation of the species." Oxidation—the combining of oxygen with foodstuffs—always follows the liberation of energy in the animal body, but just how living material such as animal tissues are able to convert the chemical energy of foodstuffs into mechanical energy is not known. "Our modern conception of calories, combustion and the fine values of foodstuffs has brought the idea of oxidation so much before our minds that we are apt to consider our bodies as a sort of glorified steam engine puffing laboriously through life on the caloric equivalents of breakfasts, lunches and dinners." This conception, however, is a fallacy, Dr. Meakins pointed out. If the liberation of energy in our bodies took place by the conversion of foodstuffs to heat with a working efficiency of 25 per cent., the temperature of the heat source

would have to be far above the temperature at which life can continue.

THE mystery of agranulocytosis, new and fatal disease of too few white cells in the blood, seems nearer solution as a result of studies reported by Drs. Francis P. Parker and Roy R. Kracke, of Emory University, Georgia, at the meeting of the American Society of Clinical Pathologists. The disease is apparently caused by certain popular headache remedies and pain-relieving drugs which contain a chemical group known as the benzene ring. That discovery, however, did not entirely solve the mystery of the disease because so many persons use these drugs in large quantities while comparatively few develop the disease. Benzene's effect of reducing the number of white blood cells may take place by reducing the amount of a sulfur-containing substance found in blood and bone marrow. This substance is glutathione and it is thought to be responsible for speeding up cell division in the bone marrow where blood cells are formed. Examination of the bone marrow in cases of granulopenia showed that the rate of cell division was slowed up. Consequently Drs. Parker and Kracke believed that the relation between the benzene and the glutathione is at the basis of the disease. It is not yet possible to say whether the benzene reduces the glutathione and thus slows up cell division and consequent production of new white blood cells, or whether it works the other way around so that persons with less glutathione develop the disease when they use benzene-containing drugs.

INFECTION is probably the result, not the cause of the fatal, cancer-like blood disease called leukemia. Evidence supporting this new view of the cause of the disease was presented by Drs. Jacob Furth, Henry W. Ferris and Paul Reznikoff, of New York City. Leukemia is characterized by an excessive number of immature white cells in the blood. In leukemia, as in cancer, the cells that multiply with such disastrous effect are malignant cells with characteristics of their own that form a new and abnormal growth. The disease further resembles cancer in that it can arise from a variety of causes, the form it takes depending on various factors. Instead of being brought on by infection, as formerly believed, the leukemia occurs first. The consequent derangement of normal cell formation breaks down resistance to infection, in the opinion of Dr. Furth and associates. Close questioning of human patients disclosed that the disease had probably been in progress long before the infection which led to discovery of the leukemia. Studies of the disease in mice, which is a close parallel to the human form, gave further evidence that the infection followed the disease and did not cause it.

A PATIENT suffering from one type of arthritis, that due to the gonococcus "germ," has an 80 per cent.

chance of being promptly cured by a few sessions of fever treatment, according to Dr. Philip S. Hench, of the Mayo Clinic, who spoke before the American Association for the Study and Control of Rheumatic Diseases. Fever treatment does not, however, offer nearly so much hope to patients suffering from other forms of arthritis, Dr. Hench emphasized. Dr. Hench showed pictures of some patients afflicted with gonorrheal arthritis or rheumatism hobbling around painfully on crutches one day and walking briskly about twenty-four to forty-eight hours later. Early and efficient treatment is necessary to obtain the best results. Even the patient who has had this type of arthritis for six weeks or more has still a 35 per cent. chance of being relieved of his painful symptoms. If he is not cured, this type of patient has an additional 30 per cent. chance of being markedly relieved with only some remaining stiffness. "Unfortunately germs supposed by many to cause the common forms of rheumatism (chronic deforming arthritis) are usually resistant to heat and apparently are not killed by the amount of fever which it is safe to induce in human beings. The development and poisonousness of these germs may be somewhat hindered, however, and circulation to the joints may be improved; hence, some of these patients with rheumatism also get relief from fever treatments, although not nearly so often as those who have gonorrheal arthritis." It was reported that, of about 315 patients with rheumatism who were treated in various clinics, 5 per cent. had been relieved of their symptoms and 25 per cent. had quite definitely been benefited.

COMPLETE rest, a very restricted diet and avoidance of the usual heart drugs will enable many patients to recover from heart attacks and return to a regular life, Dr. A. M. Master, of Mount Sinai Hospital, New York, told members of the American Heart Association. Nearly two thirds of the private patients so treated by Dr. Master and his associates, Drs. Harry L. Jaffe and S. Dack, are now able to lead normal lives. Another 12 per cent. have returned to light or moderate activity. Some of them are still living fifteen years after their first attack. Heart disease is not really increasing, in Dr. Master's opinion. He takes an optimistic view of the situation. The increase of heart deaths reported is partly due to better diagnosis and partly to the fact that more persons are living to old age, and it is only in the old age group that there is any real increase in deaths from heart disease. The stress and strain of modern life is not thought to be the cause of the increase of heart disease. Dr. Master pointed out that "there was just as much stress and strain in the Dark Ages, the days of the Huns, the plagues, the great fires, Spanish inquisition and the French Revolution as there was in the Great War or during the depression." The form of heart disease known as coronary artery occlusion has probably occurred just as frequently in the history of man as it does now. In this type of heart disease the arteries which supply the heart muscle itself with blood become so narrowed that the blood can not pass through the tiny vessels. Sometimes the vessels are stopped up by formation of blood clots. It is the latter form of the disease for which Dr. Master and associates

found the restricted diet and rest so successful a treatment.

CURING a severe and sometimes fatal disorder of the digestive tract "as if by magic" when the patients were relieved of worry was reported by Dr. Albert J. Sullivan, of Yale University School of Medicine, to the American Gastro-Enterological Association. These patients had previously been treated by all known medical means without any lasting improvement. The ailment is known medically as ulcerative colitis. Emotional factors cause about three quarters of all cases, Dr. Sullivan believes. Victims of the disorder, Dr. Sullivan found, appear to have many characteristics in common. Nearly all are between 20 and 30 years old. They have high intellectual capacity, are neat to the point of fussiness and are emotionally tense. Outwardly calm, they are unable to throw off the effects of an emotional episode as most people do. One patient described this common trait of the group by saying, "When I get into a quarrel or some unpleasant thing comes up, I stew over it for three or four days." The digestive disorder always starts within a few days of the emotional upset. This makes it comparatively easy to get at the root of the trouble without long psychiatric examination, as the physician needs only to discuss with the patient his state of feelings for the few days preceding the attack. Most patients recover completely as soon as they have talked freely to the doctor about their emotional difficulties. One or two who refused to talk about how they felt, or to admit that this could have anything to do with their physical illness, failed to recover from the condition. Emotion acting through certain nerve centers in the brain stimulates part of the digestive tract to such activity that it begins to digest its own surface, Dr. Sullivan suggested as an explanation of the nervous and mental cause of the disease. Once this digestive self-cannibalism has happened, disease germs can easily invade the digestive tissues and ulcers then form.

New knowledge of cancer and how it is caused may be found by study of the relation between cancer and age, Dr. C. C. Little, managing director of the American Society for the Control of Cancer, indicated in a report to the American Society of Clinical Pathologists. "The relationship between cancer and age is altogether too close to be considered as due to chance alone," Dr. Little said. "It undoubtedly has significance and will prove a fruitful field for further investigation." Cancer is relatively extremely rare during the rapid period of body growth in youth. It begins to become frequent during the period when the centralized control of the body, exercised by the glands of internal secretion, begins to weaken. This control weakens when the glands grow old, which they do with the passing of time just as the rest of the body does. As the glands grow old their secretion undoubtedly changes not only in amount but in its ability to do the work for which it was originally intended. As a result an unbalance is produced inside the body. The control of body activity which the glands exert at the peak of

their activity has weakened and it is at this point that cancer becomes frequent. Dr. Little did not say that the increase in cancer was due to this failure of the glands of internal secretion. But this appears to be one of the points which could be cleared up by the study he suggested of the relation between cancer and age. The common idea that cancer is a growth on some part of the body is wrong. The disease is uncontrolled growth of some part or parts of the body. The cancer is not a strange element introduced into the body by an outside agent, but a natural part of the individual possessing it.

MOST of the many blood tests for cancer are "perfectly valueless," Dr. I. Davidsohn, of Chicago, told members of the American Society of Clinical Pathologists. One that is particularly valuable, however, was developed by Dr. H. Fuchs, of Germany. This test diagnoses cancer correctly in between 85 and 95 per cent. of the cases, according to results in over five thousand tests made by many investigators in this country and abroad. The test depends on the presence of an enzyme in the blood of non-cancerous patients which can digest the fibrin or precipitate the serum from the blood of cancer patients. The digestion is determined by measuring the amount of a certain form of nitrogen in the blood. This latter is an ordinary laboratory test but because the change in level of this non-protein nitrogen, as it is called, is very slight in the cancer test, it is difficult to detect it by the usual methods. Dr. Fuchs has put out a special instrument for this purpose, which, however, is quite expensive. Dr. Davidsohn hopes that other scientists will investigate the Fuchs cancer test and perhaps find a way to make it more generally useful.

THE only way to determine intoxication positively, as in the case of drunken drivers, is by examination of the brain tissue after death or by examination of the spinal fluid in living persons, in the opinion of Dr. A. O. Goettler, of New York City. Dr. Goettler gave his opinion at the meeting of the American Society of Clinical Pathologists in answer to a question at the conclusion of his report on methods of detecting poison in children who had accidentally been given the wrong medicine or had themselves sampled the contents of the family medicine chest. Dr. Goettler and associates in the medical examiner's office of New York City do not believe that tests of the breath, blood or kidney excretion give definite evidence of intoxication. Such tests, he said, only show that "a man has partaken of alcohol."

VITAMIN E, known to be necessary to animals in producing their offspring, has also proved helpful to human mothers who desire children. Sixty-five human cases treated with the vitamin in a preparation of wheat germ oil were reported by Dr. Earle M. Watson, of the University of Western Ontario. This is said to be one of the few times when the vitamin has been used to treat human beings. Its existence and probable rôle in reproduction has been demonstrated in other animals, but there has been much doubt as to its rôle in human reproduction. Whether the vitamin can be used in medical practise re-

mains to be seen. The wheat germ oil preparation of vitamin E, made at the University of Western Ontario, was given to a group of mothers who had repeatedly been disappointed by losing their babies before time for natural birth; to another group threatened with the loss, and to others who had not been able to become mothers. Best results were obtained with the first two groups. Those who had previously not been able to have children were not helped by the vitamin treatment. Many of those who had repeatedly lost babies before birth, however, had normal children after the vitamin treatment.

DISORDER or disease of the nerves in the area around the appendix may be the cause of some cases of chronic appendicitis, according to Dr. Louis C. Simard, of Montreal. Dr. Simard bases his opinion on studies of all the appendixes removed at the Notre Dame Hospital, Montreal, between 1927 and 1931. He found an abnormal condition of the nerves in slightly over half the appendixes removed in cases diagnosed as chronic appendicitis. In those diagnosed acute appendicitis, only 9 per cent. showed these changes in the nerves. Another group of appendixes studied by Dr. Simard had been removed in the course of operation for some other condition. Nearly one third of the appendixes in this group showed nerve changes, which suggests that these were the cause of symptoms interpreted otherwise than as appendicitis.

CALLING posture "an attitude of mind," Dr. Armitage Whitman, of New York City, pointed out that the greatest emphasis must be placed on mental attitude in treating even such conditions as curvature of the spine. The patient should be treated first and the disease second, in his opinion. In some cases of curvature, definite permanent improvement may be obtained in direct ratio to the patient's intelligence. Curvature of the spine is the result of man's assuming the upright position and the consequent struggle against the force of gravity. Placing the patient on his back therefore removes this important factor in the cause of the condition and is one of the methods of treatment he recommended. No back is so crooked that it can not be improved by effort. Severe methods of correction of curvatures would be unnecessary if the importance of the mental attitude were more generally understood.

ONE of the fungus-like formations found on the skin in cases of ringworm and previously thought to be the cause of the disease is not really a fungus at all but is made up of crystals of a chemical substance, cholesterol. Evidence for this was reported by Drs. A. M. Davidson and P. H. Gregory, of the University of Manitoba, Winnipeg. This discovery makes it doubtful whether the newly identified crystals have any relation to ringworm infection. Mere presence of this crystal structure, which has been called "mosaic fungus" because of its pattern, obviously is not evidence of infection with the ringworm organism. Investigators had previously doubted whether the structure was a real fungus. The Canadian discovery shows that it is not.